

CLAIMS

1. Spraying device for water under pressure comprising: - a tubular body which defines a chamber (3) connected to a supply of water under pressure, - a nozzle (1) arranged at the outlet of the said chamber (3), equipped with an orifice (7) forming an atomizer (12) which extends from the neck of the said nozzle and – a constriction organ in the form of a valve (6), arranged in the orifice (7) of the said nozzle in order to form a hollow, thin-walled jet, characterized in that the said orifice (7) comprises a surface shaping the hollow jet, which is arranged to produce at the level of this latter, an asymmetry of rotation around the ejection axis (4).

2. Spraying device according to Claim 1, characterized in that the surface shaping the jet comprises a truncated part A which extends from the neck (11) of the nozzle (1) and which is followed by a discharge surface B, the angle of which in the axial longitudinal plane of the said nozzle changes in accordance with a non-linear profile diminishing from upstream to downstream, and the axial length of which varies between a value zero or essentially zero with, at this location, a jet the outlet angle of which corresponds to the angle of the said truncated part, and a value of the order of several millimeters, adapted to the choice of the outlet angle desired for the said jet, this angle being less than the angle of the truncated part A.

3. Spraying device according to Claim 2, characterized in that the aperture angle of the hollow jet varies from a value H which is of the order of at least 60° and a value V which may be less than 20°.

4. Spraying device according to any one of the Claims 1 to 3, characterized in that it comprises at the level of the surface shaping the hollow jet, grooves (15, 15') which are oriented according to a plane passing through the axis (4) of the nozzle, these grooves are arranged either at the level of the trailing edge (13) of the said nozzle or at the level of the neck (11).

5. Spraying device according to Claim 4, characterized in that the grooves (15, 15') are positioned with an angular spacing varying from 2° to 10°.

6. Spraying device according to Claim 4, characterized in that the grooves (15, 15') have an axial length such that they make it possible to maintain a leakage flow rate when the valve (6) is in the active closure position.

5 7. Spraying device according to any one of the Claims 4 to 6, characterized in that it comprises grooves (15, 15') made by means of a disk type milling cutter (16, 16'), the periphery of which forms an angle of 90°, this milling cutter is positioned in a plane passing through the axis of the nozzle.

10 8. Spraying device according to any one of the Claims 1 to 7, characterized in that it comprises two nozzles (1) which are connected to corresponding chambers (3) fed with water under pressure, these nozzles (1) are centered in the same plane and form between them an angle which is included between 60° and 100°, and in that it comprises means
15 for the simultaneous control of the valves (6) of the said nozzles making it possible to vary at will the flow of the water to be sprayed under pressure.

9. Spraying device according to Claim 8, characterized in that it comprises valves (6) adjustable by means of a screw nut system, each valve comprising a part acting as a nut, adjustable by means of a screw
20 (31), this valve (6) being prevented from rotation by appropriate means and each adjustable screw (31) being equipped with a toothed wheel (34) which is geared to the same motorized endless screw (35), this motorized screw making possible the simultaneous control of the two valves (6).

10. Spraying device according to Claim 8, characterized in that it
25 comprises a single-piece body (2) equipped with drill holes forming the chambers (3) supplying water under pressure, these chambers are arranged to receive the spraying nozzles (1), the said body (2) being also equipped with drill holes for the installation of nucleation means (20) fed with water under pressure at the same time as the nozzles (1), and with
30 air under pressure, these nucleation means (20) being present in the form of cartridges screwed to the extremity of the drill holes.